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# INSIDE LOGISTICS

EXPLORING THE HEART OF LOGISTICS

## Deploying and Sustaining an F-117A Expeditionary Fighter Squadron: Why Agile Combat Support Is Needed Now

*Captain Jamie D. Allen, USAF*  
*First Lieutenant M. Brian Bedesem, USAF*

The art of war is simple enough. Find out where your enemy is. Get at him as soon as you can. Strike at him as hard as you can and as often as you can, and keep moving on.

—On the Art of War by Ulysses S. Grant

Two campaigns fought over 130 years ago decisively influenced the outcome of the Civil War. Both the Vicksburg and Gettysburg campaigns ended the same day, 4 July 1863, with a Union victory. In both, logistics played a decisive role.<sup>1</sup> Today, Commanders in Chief (CINCs) employ their forces knowing that logistics continues to play a decisive role in successfully engaging enemy forces anywhere on the globe, whether they are large military forces or smaller groups of terrorist.

To further develop the inherent capabilities of airpower, we must continue to explore ways to deploy *light* and *lean* as an Air Expeditionary Force (AEF). To this end, initial response and sustainment capability remain key to effectively deploying and employing AEF airpower anywhere in the world. In order to meet this task, logisticians must rely on the principles of Agile Combat Support (ACS) which are, by definition, the cornerstone of Global Engagement and the foundation of the other Air Force core competencies. According to *Global Engagement: A Vision for the 21<sup>st</sup> Century Air Force*, the Air Force should be able to orchestrate military operations throughout a theater of operations and bring intense firepower to bear over global distances within hours to days. This, by its very existence, gives national leaders unprecedented leverage and therefore advantages.<sup>2</sup> The response and sustainment capability that ACS provides to the Global Engagement concept is what helps distinguish Air and Space Power—speed, flexibility and global perspective.

To maximize the logistical capabilities of ACS, we must focus on the word *Agile*. This fundamental principle of logistics simply means to be mentally quick and resourceful.<sup>3</sup> The challenge to all logisticians, therefore, is to maximize all available resources by learning from our past successes and failures. A Deputy Commander for Maintenance's September 1990 report on lessons learned during his first 30 days of setting up operations in Saudi Arabia showed Agile Combat Support principles would have helped.<sup>4</sup> Forgotten equipment,

lack of spare parts and interrupted resupply plagued initial F-16 operations. A strikingly similar report of a maintenance officer's recent deployment to Saudi Arabia with a full squadron of F-15s showed an eerie resemblance of the same need.<sup>5</sup> Despite the efforts of many talented logisticians, several factors, including lack of sustainment capability, drove the mission capable rate below 50 percent after only a month of combat sorties. In addition to these contingency-based lessons, there are also some general logistics lessons learned available in the Air Force Logistics Management Agency report on AEF I-III exercise deployments to Bahrain, Jordan and Qatar during 1995-96.<sup>6</sup>

Efforts should continue to magnify the positive aspects inherent in ACS. Therefore, this article will discuss lessons learned during a recent deployment of F-117As to Kuwait.<sup>7</sup>

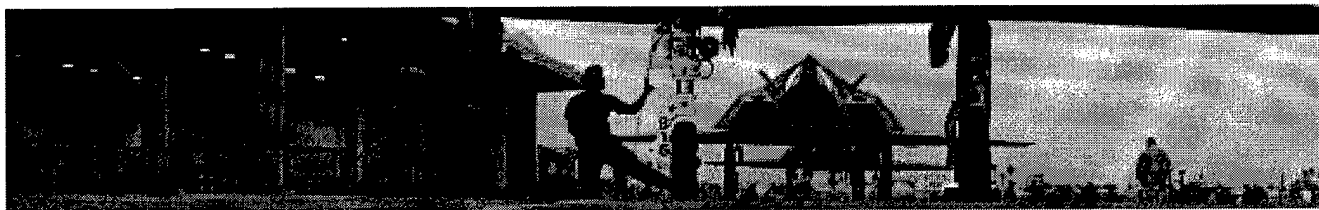
### Background

The first large-scale deployment of both F-117A operational squadrons was to Saudi Arabia during Operation DESERT SHIELD/STORM. Afterwards, eight aircraft remained and personnel rotated every three months until all aircraft and personnel returned home in early 1994. The next deployment was September 1996 – March 1997 to Kuwait with eight F-117As in support of Operations DESERT STRIKE and SOUTHERN WATCH. In November 1997, the political situation again worsened in Iraq. Prior to the US Secretary of State and Secretary of Defense flying to allied countries in Southwest Asia to discuss the political and military situation, the 49<sup>th</sup> Fighter Wing (FW) leadership started preparation for possible deployment of F-117A aircraft, anticipating the need for rapid deployment.

After a week's worth of quiet preparation, wing leadership was faced with the decision whether or not to proceed with a scheduled Phase II exercise the following week. With no definitive answer on the horizon from higher headquarters, the difficult decision to press forward with the needed exercise was made. On the second day of the exercise, with equipment and supplies moved to their exercise deployed locations on base, the real-world deployment orders were received from Headquarters Air Combat Command (HQ ACC). The wing quickly switched from a Phase II exercise to a real-world Phase I deployment. Responsiveness, a pillar of Agile Combat Support, was first to be tested.

### Deployment

The 49 FW was tasked to deploy as part of an AEF. This AEF, once deployed, was comprised of the 347<sup>th</sup> Air Expeditionary Wing (AEW) in Bahrain, the 2<sup>nd</sup> Air Expeditionary Group (AEG) in Diego Garcia and the 8<sup>th</sup>



Expeditionary Fighter Squadron (EFS) in Kuwait.

The wing battlestaff met 30 minutes after deployment notification and exercise termination. While operations worked out flight plans and how to build the air bridge of tanker support, unit logistics elements finalized load plans and airlift requirements. An initial meeting of unit representatives at the Deployment Control Center (DCC) immediately after the battlestaff meeting helped confirm airlift requirements. This cross check eliminated several large pieces of equipment that enabled load planners to better utilize airlift. The wing mobility machine was fully operational within hours of terminating the exercise. Equipment was brought back from Phase II operating locations to the units for preparation to deploy. Knowing deployment could come quickly, the deploying fighter squadron commander held a meeting for all deploying personnel that afternoon to solidify the team he would lead as the 8<sup>th</sup> Expeditionary Fighter Squadron in Kuwait. While cargo was marshaled for final inspection all afternoon and evening, airlift was sourced. Airlift was comprised of one C-141 for the enroute support team (which left at midnight) to Langley AFB and four C-5s and two C-17s. Much to the wing's surprise, all airlift arrived within one day.

By 1800 hours the next day, six F-117As, approximately 290 tons of equipment and supplies and 235 personnel departed for Ahmed Al Jaber AB, Kuwait.

#### **Lesson 1: Utilize Strategic Warning Wisely.**

The time between the National Command Authority approving the deployment and deployment notification at the base-level can be hours. By preparing early, all units were able to determine requirements for equipment, supplies and aircraft and to put names to the personnel lists. However, several functional key areas did not have the time to call ahead to the bed-down location to predetermine requirements. They literally worked out some bed-down issues during the flight and during layovers in Europe.

#### **Lesson 2: Conduct One Final Review of Load Plans Prior to Loading Transport Aircraft.**

One final review of all load plans was not accomplished. As a result, we took a little more cargo and equipment than needed. When units are tasked for rapid deployment, there is a natural tendency for them to keep adding requirements at the last minute, thus changing airlift and bed-down requirements.

#### **Bed-down**

Remember the F-15 maintenance officer who had a difficult time in Saudi Arabia? He expected airlift to deliver his people and equipment on time, in the correct sequence.<sup>8</sup> We both had our cargo delivered in a sequence different than what was planned at home-station. Is this important? Absolutely! For AEFs to be effective, units must reach combat

capability as soon as possible in the early stages of the conflict in order to take the advantage.

The first airlift arrived with personnel and equipment at Kuwait City International Airport (KCIA) at daybreak, about 80 hours after receiving the deployment order. Equipment and supplies were then moved, as they arrived, to Ahmed Al Jaber AB, approximately 45 miles away. Holloman AFB transportation personnel and transportation augmentees from Prince Sultan AB worked around-the-clock for three days, ground-hauling the cargo, over 290 tons worth, to Al Jaber with only a handful of 40-foot flatbed trucks because of a country-wide shortage of trucks. The one C-5 that contained most of the critical equipment and supplies needed to reach initial combat capability arrived last.

#### **Lesson 3: Prioritize All Increment Numbers.**

Have a plan, prior to leaving home-station, which prioritizes all increment numbers. This enables transportation personnel at the deployed location to deliver the most critical cargo first. The 49 FW has since renumbered all increments by function (for example, fighter squadron, supply squadron, etc.) in order to identify ownership and has tasked each unit to prioritize their increment numbers. The final task is to develop one complete list that prioritizes all cargo delivery during the bed-down phase.

With cargo moving, the deployed First Sergeant worked billeting assignments for personnel as they arrived. The Squadron Commander, Squadron Maintenance Officer and Sortie Generation Flight Chief arrived at KCIA on the first airlift (no advanced echelon—deployed too fast) and were the first to arrive at Al Jaber an hour later. They went directly to the flight line and arrived just as the F-117As were turning off the runway. With much-welcomed help from A-10 *maintainers* from Pope AFB, the aircraft were recovered. Within an hour after arrival, we not only received all needed squadron vehicles but also 12 land mobile radios. The radios were already rekeyed to Al Jaber frequencies by the communication personnel who deployed with us to set up the Wing Initial Communication Package (WICP). With no other personnel and no equipment or supplies, the immediate focus was on:

1. Transporting people and cargo as quickly as possible from KCIA to Al Jaber.
2. In-processing of personnel, assignment of work schedules and developing a recall roster to ensure responsiveness and accountability.
3. Construction of an operations building from scratch. The 8 EFS operations building consisted of three general purpose shelters connected together and completely empty—only external walls, a ceiling and a floor.

#### **Lesson 4: Understand WICP Capability.**

Effective bed-down, another key tenet of Agile Combat Support, is dependent on establishing initial communication

capability in the right priority. However, it appears most logisticians have a poor understanding of the capability of a WICP. To remedy this, the 49<sup>th</sup> Communication Squadron Commander is scheduled to brief the capability of a WICP to all wing logistics officers. This briefing is scheduled for one of the LG-sponsored biweekly meetings of all wing logistics officers as part of the 49 FW Logistics Officers Training Program.

#### **Lesson 5: Don't Always Assume You Will Get All Your Base Support Structure Setup Before You Arrive.**

Logisticians cannot always control diplomatic clearances and tanker support. Therefore, your aircraft may arrive before you or as you are starting your bed-down phase.

### **Sustainment**

Once deployed and with the bed-down phase complete, the complex task of sustaining a unique weapon system over 7,000 miles from home-station began. Sourcing and maintaining the necessary supplies on-hand to start immediate combat operations at high sortie rates quickly became a primary focus.

#### **Fuel and Munitions**

All equipment and supplies were quickly and completely inventoried to ensure all had arrived and were serviceable. The next step was to ensure enough fuel was on-hand to support initial flying and to support increased combat sortie rates as required by the developing Air Tasking Order (ATO). Also, our munitions crew started inspecting the on-hand ammunition. The Squadron Weapons Officer, working in Operations, coordinated hourly during the first few days with the Munitions Chief to go over what would be needed and what was available.

Reliance on prepositioned assets played a major role in allowing only a short bed-down period prior to becoming fully combat ready. Lieutenant General Hallin, the former Deputy Chief of Staff, Installations and Logistics, at HQ USAF, recently wrote,

Although one goal of Agile Combat Support is to reduce forward-deployed inventories, even under the AEF concept, these stocks cannot be eliminated. Deploying forces must still rely on some prepositioned assets to spin up deployed forces and begin immediate sustainment, particularly fuel and munitions.<sup>9</sup>

This became very evident, especially while trying to establish and sustain our initial seven to ten days of combat capability.

#### **Lesson 6: Ammunition (AMMO) Stocks Must Be Forward-Deployed.**

Forward-deployed assets may or may not be a long distance away, depending on your location. Make sure your AMMO personnel call ahead to understand what the theater CINC's staff is planning. The lead logistician, in this case the deployed senior Aircraft Maintenance/Munitions Officer, must attend daily intelligence briefings to stay on top of the requirements. These intelligence briefings help determine the political and military situation, which in turn can drive sudden changes in the planned types of munitions and the rate of usage.

### **Safety and Security**

The newly developed USAF Operational Risk Management (ORM) program quickly became a valuable friend to us while at Al Jaber. Protection of people and assets were constant issues. Of special note was the 1995 RAND project, *Check Six Begins on the Ground—Responding to the Evolving Ground Threat to U.S. Air Force Bases*.<sup>10</sup> This report, which was published just a year before the ground attack on Khobar Towers at Dhahran AB, convincingly argues that no power in the world seems capable of defeating American air forces in the air. Hence, enemies may have found the most attractive method of defeating American airpower is attacking the sortie generation capability on the ground.

With this in mind, ORM methods were used not only for traditional ground, weapons and flight safety, but to counter a serious terrorist threat.

#### **Unexploded Ordinance (UXOs)**

Al Jaber AB is still riddled with UXOs from DESERT STORM. A few soft-surface pathways were cleared, including all of tent city, but most of the unpaved areas on base were off limits. This posed a significant problem to maintenance personnel recovering F-117A drag chutes that blew off the runway after an aircraft landing. After talking through the issues and understanding the risk involved, procedures were established to quickly alert an Explosive Ordinance Disposal team and have them recover the drag chutes. This greatly minimized potential Foreign Object Damage to other aircraft in the pattern and the danger to maintenance personnel during late-night operations.

#### **Net Explosive Weight (NEW) Requirements**

When deploying to airfields with limited space in the parking area, a risk assessment must be made to determine the risk involved with certain flight line operations. The risk associated with parking loaded F-117As close together and the subsequent operational capability it provided by freeing up limited ramp space was frequently discussed. Although freeing up additional ramp space was attractive at first, close review of NEW calculations by weapons, ammo, safety and operations experts determined the extra operational capability was not worth the risk to our operation. Decreasing the access of a potential enemy to a concentrated target of loaded aircraft was in our best interest. Several plan options were drafted and presented to on-scene commanders who were ultimately responsible to accept the risks involved.

#### **Lesson 7: ORM Tools Are Needed to Remain Highly Capable.**

ACS necessarily includes conducting safe combat logistical operations, which enhances resource availability. Squadron Safety and Security NCOs must develop checklists for use upon arrival at a deployed location, especially for new locations. There is a tendency to run these important programs at home without thought of deployed operations. This point is especially true when less than full squadrons deploy and squadron staff personnel, for example Safety and Security NCOs, stay behind along with their continuity books.

### **Time-Definite Resupply**

ACS also requires a shift from the fundamental way deployed forces are supported through a concept called time-definite resupply. By using the ability to reach back to the Continental United States (CONUS) for supply support and relying on a set delivery time, this type of resupply became critical to the sustainment of our operations because of efforts to conduct a leaner deployment in order to increase airlift availability. Fortunately, significant improvements were made in the mobility footprint of F-117A aviation packages over the last year.

The first small-scale combat deployment of the F-117A was in September 1996 when Iraqi forces threatened United Nations-sanctioned forces deployed in support of the No-Fly Zone. F-117A squadrons, having deployed almost all their aircraft during Operation DESERT STORM, had not pre-planned a smaller aviation package in support of smaller sustained combat deployments. To support the short-notice deployment of eight F-117As to Al Jaber AB, an entire 18-aircraft Mobility Readiness Spares Package (MRSP) was deployed. The MRSP contained 22 *pallets* of aircraft spares and supplies. Some of the larger-than-normal size of the MRSP is due to the unique coatings on the aircraft.

During preparations for the November 1997 short-notice deployment of six F-117As, again to Al Jaber AB, a concentrated effort to reduce footprint size was initiated and resulted in deploying only 14 *pallets* of MRSP. When six additional aircraft deployed in February 1998, no additional spares were sent.

As a result of an 11-month effort by 49 FW logisticians to reduce the mobility footprint, new requirements were completed in August 1998 for 8 aircraft and 12 aircraft aviation Unit-Type Codes (UTCs). The 18 aircraft aviation UTC was reviewed as well. The result was reducing the equivalent of 6.4 C-141 aircraft required in support of deploying 18 F-117As. In terms of supply support, a significant reduction was achieved by determining only about *ten pallets* of MRSP spares are needed in support of eight aircraft.

Do you see the trend? 22 pallets, 14 pallets, 10 pallets. This well thought-out reduction, however, moved us closer to relying on time-definite resupply because of the lower amounts of deployed spares. We also learned the harder we looked at reducing our mobility footprint, the more we became reliant on a supply and transportation system to deliver on-time.

### How Did Time-Definite Resupply Work?

Before deploying to Kuwait in November 1997, the deploying MRSP was transferred to the Air Force Contingency Supply Squadron (AFCSS) at Langley AFB. A Logistics Readiness Center (LRC) was set up at Holloman AFB to help AFCSS with the resupply effort, to include deploying a Logistics Plans Officer to run the LRC effort at Al Jaber. At Al Jaber, we ordered supplies directly through the AFCSS using laptops connected to a base local area network (LAN) in the hangar. AFCSS sourced the items, and they were shipped to us. Sounds easy right? Here is what we encountered. It took base communication personnel almost a week to get the MRSP personnel online with AFCSS in the hangar. They were overwhelmed with activity and encountered

connectivity problems. Fortunately, a Standard Base Supply System (SBSS) terminal was available in the A/OA-10 hangar across the flight line to order parts until we were connected with the base LAN. Although Core Automated Maintenance System (CAMS) connectivity with home-station was achieved at about the same time the SBSS link was made to Langley, aircraft parts could not be ordered via CAMS as required at home. CAMS was connected to Holloman AFB, while SBSS was connected to Langley AFB. If a part was ordered via CAMS, Holloman Supply would have received the requisition. Hence, document numbers and status had to be manually updated in CAMS during the 7-month deployment. This was not a *train like you fight* method of doing business. CAMS is not a luxury while deployed, it is a necessity. If aircraft are to be maintained safely and efficiently, current aircraft information must be available during maintenance.

Since high sortie rates were not initially encountered due to postponement of combat operations, parts were consumed out of the MRSP and levels decreased while awaiting resupply. This is where time-definite resupply became a prime focus. Parts were ordered, AFCSS sourced the parts and the Holloman LRC diligently tracked the status of the items in the international pipeline and sent daily updates on every item order. This daily update included from 75-185 items each day that were somewhere in the global pipeline. After quickly working out initial problems with AFCSS, two areas kept our attention:

**1. AMC Throughput at Dover AFB.** The difference between express carriers and AMC was quite remarkable. The F-117A is somewhat dependent on *ugly cargo* (mostly hazardous, but also some oversized and outsized cargo). Since express carriers were cost-prohibitive to ship hazardous items, AMC got the job. By and large, working Mission Capabilities (MICAPs) was a small part of the sustainment workload. Being proactive to prevent MICAPs, we constantly worked MRSP replenishments, time changes and first-time requisition of items not loaded in the MRSP. The concept of CONUS Reach Back, as outlined in Global Engagement, was top on our list.

Lack of AMC aircraft made deployed sustainment operations challenging. AMC had the right system in place to prioritize movement of cargo. However, the lack of airlift directly impacted efforts to conduct time-definite resupply efforts. AMC normally moves units first, MICAPs second, MRSP replenishment third and Non-MRSP requisitions last. It is expected, though, that deployed units used the right project codes and the correct required delivery dates. Unfortunately, some requisitions were held at Dover AFB awaiting airlift for over three weeks.

### Lesson 8: Consider Taking 30 Days of Supplies That Ship as Ugly Cargo.

AEFs may not enjoy the dedicated *Desert Express* transportation service provided by Air Mobility Command during DESERT SHIELD/DESERT STORM. Hence, consider taking 30 days of supplies that ship as ugly cargo. An alternative is to calculate the cost of keeping a 7-day supply on hand and paying the extra cost to ship via express carrier.

**2. Returning Repairables to CONUS.** Six weeks into the deployment, our Logistics Group Commander (LG) at home-

station discovered all reparable were returning to CONUS only via AMC. When we first arrived at Al Jaber AB, express shipments were being delivered to the flying squadron already there. So it was assumed at least two-level maintenance (2LM) and Lean Logistics (LL)-coded parts were returning via the same mode as well. They were not. Personnel at Al Jaber AB were unaware of previous messages authorizing the use of express shipments from Southwest Asia back to CONUS for all reparable. The Transportation Squadron at Prince Sultan AB, Saudi Arabia, was called and found they were express-shipping only 2LM and LL-coded parts back to CONUS and used AMC for all the other parts. Once initial contact was made for service back to CONUS, it took two months before the contract was in place and express shipments started back to CONUS.

#### **Lesson 9: Work Transportation of Reparable Returns Prior to Deployment.**

Before deploying, supply personnel should coordinate with transportation and contracting to determine where the nearest express carrier service is located in relation to the deployed site and whether or not a contract is already established.

#### **Lesson 10: Take an Experienced Supply NCO Dedicated to Managing the Resupply Effort.**

The four supply personnel managing the MRSP had their hands full with duties including MRSP replenishment, flight service center, mobility bags and management of M-16 rifles. The lieutenant running the deployed LRC effort was busy with personnel moves in and out of theater, tracking equipment and working load plans for redeployment. In the future, we will take an experienced Supply NCO solely dedicated to tracking the status of all requisitions through the international pipeline. That may sound easy, but it is not, and it is critical to establishing time-definite resupply you can count on.

### **Recommendations**

1. Pursue the development of the Support Options Analysis model recommended by RAND.<sup>11</sup> This model may help deploying units assess, via spreadsheets, the requirements for munitions, POL, support equipment, spare parts, engines, vehicles and shelters prior to deployment.

2. Develop a CONUS site for AEF exercises. This site is needed for combat support exercises to train deployment, bed-down and sustainment of AEFs. It could be used as a main operating base, forward operating location or bare base. The operations community trains using Red Flag exercises, Joint Forces Air Component Commander (JFACC) exercises and Command and Control exercises like the recent Expeditionary Force Experiment 98. The logistics community needs realistic training as well.

3. Change Inspector General criteria on how Operational Readiness Inspections (ORIs) are conducted. Current ORIs do not effectively inspect bed-down and sustainment capability, one of the biggest challenges faced by logisticians. This requires a paradigm shift away from separate Phase I and Phase II exercises. By combining the ORIs, the effect of poor planning and execution will be seen during the bed-down and sustainment phases of the deployment. We should train like we

fight.

### **Conclusion**

Many aspects of Agile Combat Support were applied during the recent deployment of F-117As to Kuwait and good results were achieved. The overall mission capability rate for the 7-month deployment was 85.6 percent, 5 percent above the ACC standard—but we still have some work to do.

During the 18-20 August 1998 Agile Logistics Users' Group Meeting, RAND briefed they believe fighter AEF packages can meet a 48-hour bombs-on-target goal to prepared forward-operating locations in Southwest Asia. To make that happen, they estimate tight timelines will be faced and there will be little room for error. Looking back at our last three short-notice F-117A deployments to Kuwait, we agree. However, those constraints must also be applied to the bed-down and sustainment phase of future AEF deployments.

If Ulysses S. Grant was at war with the enemies of today, he would say Agile Combat Support would let us all get at the enemy sooner, strike at him harder and longer and then keep moving on, preferably home.

#### **Notes**

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*Captain Allen was the Squadron Maintenance Officer in the 8<sup>th</sup> Fighter Squadron. While deployed, he was the Squadron Maintenance Officer in the 8<sup>th</sup> Expeditionary Fighter Squadron. He is now a Supply Officer in the 49<sup>th</sup> Supply Squadron. First Lieutenant Bedesem was a Logistics Plans Officer in the 49<sup>th</sup> Logistics Support Squadron. While deployed, he was the Deployed Logistics Officer in the 8<sup>th</sup> Expeditionary Fighter Squadron. He is now serving as a wing-level Logistics Plans Officer.*